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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,209	01/27/2006	William Charman	66307358	5439

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DYKEMA GOSSETT PLLC
FRANKLIN SQUARE, THIRD FLOOR WEST
1300 I STREET, NW
WASHINGTON, DC 20005

EXAMINER	
KASSA, TIGABU	

ART UNIT	PAPER NUMBER
1619	

MAIL DATE	DELIVERY MODE
07/21/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/566,209	CHARMAN ET AL.	
	Examiner	Art Unit	
	TIGABU KASSA	1619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 April 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-14 and 16-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6, 8-14, and 16-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Request for continued examination

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/22/10 has been entered.

Formal Matters

Applicants' amendment filed 04/22/2010 is acknowledged and entered due to the filing of request for continued examination. Claims 7 and 15 have been cancelled by Applicant. **Claims 1-6, 8-14, and 16-22 are pending. Claims 1-6, 8-14, and 16-22 are under consideration in the instant office action.**. Claims 1-6, 8-14, and 16-22 have not been amended. The only change to the claims in the RCE filed 4/22/2010 is the cancellation of claim 7.

Moot Rejections/Objections

All rejections and/or objections of claims 7 and 15 cited in the previous office action mailed on November 25, 2009 are moot, because said claim(s) has/have been cancelled.

Rejections Maintained

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness

Claims 1-4, 9-10, 12-14, 16, and 22 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Barnett et al. (US Patent No. 4999198, IDS reference) in view of

Zecchino et al. (WO 01/62214, IDS reference) as evidenced by Final report on the safety assessment of peanut (Arachis Hypogaea) oil etc., International Journal of Toxicology, 20(2):65-77, 2001, for the reasons of record and the reasons set forth herein.

Claims 1, 5-6, and 8 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Barnett et al. (US Patent No. 4999198) in view of Zecchino et al. (WO 01/62214, IDS reference) and Wheeler et al. (WO 97/332559 IDS reference), for the reasons of record and the reasons set forth herein.

Claims 1 and 10-11 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Barnett et al. (US Patent No. 4999198) in view of Zecchino et al. (WO 01/62214, IDS reference) and Leigh et al. (US Patent No. 6599527), for the reasons of record and the reasons set forth herein.

Claims 1 and 17-21 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Barnett et al. (US Patent No. 4999198) in view of Zecchino et al. (WO 01/62214, IDS reference) and Metziger et al. (US Patent 5952383), for the reasons of record and the reasons set forth herein.

Response to arguments

Applicants' arguments filed on 04/22/2010 have been fully considered but they are not persuasive. The examiner notices that applicants set forth their arguments in response to the

previous office action together. Therefore, the examiner also set forth below his rebuttal arguments together.

Applicants argue that the examiner has simply stated that Barnett et al. disclose the preparation of drug delivery systems in polyaphron foam. However, this summary is incomplete since it does not explain the fundamental differences between claim 1 of the present application and the disclosure of Barnett et. al.

This is not found persuasive because the pervious office action clearly set forth the essential teachings of Barnett et al. on pages 4-5 more than what applicants' allege and also clearly ascertain the elements that Barnett et al. do not teach on page 6 of the office action clearly describing the elements that are missing from Barnett et al.

Applicants argue that this should be contrasted with the disclosure of Barnett et al., which is already acknowledged as prior art on page 3, line 31 to page 4, line 13 of the present application. Barnett et al. describe a polyaphron composition having a continuous phase and a disperse phase in which the drug is carried in the disperse phase (see the Abstract). However, the drug must be water-soluble. This is because the invention of Barnett et al. is to allow the drug to be transferred easily into an aqueous medium (see column 1, lines 46 to 50 and claim 1). Thus, there area number of fundamental differences between the compositions of Barnett et al. and those of claim 1 of the present application. In particular, the generic reference to drugs in Barnett el al., and the specific disclosure of scopolamine, are for drugs which are water-soluble, otherwise they could not be transferred into the aqueous medium. Claim 1of the present application requires the drug to be poorly water-soluble as indicated above.

This is not found persuasive because Barnett et al. clearly teach that with the peanut oil polyaphron, no detectable release of scopolamine was observed after 68 hours (column 3, lines 8-10). Since the scopolamine had an appreciable solubility in this oil, it did not partition to any extent with water (column 3, lines 10-12). One of ordinary skill in the art will infer from this teaching that the scopolamine did not partition in the water but in the oil because it is more soluble in the oil than in the water. Furthermore, the examiner incorporates an evidentiary reference Uda et al. (US Patent No. 5840881) in order to rebut applicants' arguments by proving that scopolamine indeed is a water-insoluble or slightly water soluble compound. Uda et al. teach a composition is disclosed comprising a water-insoluble or slightly water-soluble compound and a branched cyclodextrin-carboxylic acid (see abstract). Uda et al. teach that as **the water-insoluble or slightly water-soluble compounds, there are usually used compounds having a water-solubility of not more than 10 mg/ml**, which need enhancement of the solubility (column 8, lines 35-38). Uda et al. teach that **examples of the water-insoluble or slightly water-soluble drugs** useful as active ingredients of medicaments or veterinary drugs include antipyretic analgesic anti-inflammatory agents such as salicylic acid, sulpyrine, flufenamic acid, diclofenac, indomethacin, chlorpromazine, prochloroperazine, trifluoperazine, atropine, **scopolamine**, etc. (column 8, lines 39-44).

Applicants assert that in Barnett et al. there is no disclosure of the amount of continuous hydrophilic phase and pharmaceutically acceptable oil. The preparation method given in column 2 of Barnett et al. does not indicate the amount of water used. Regardless of this, however, the passage on column 2, lines 47 to 51 clearly indicates that, for the partitioning, 40 ml of polyaphrons was partitioned against 100 ml of distilled water. Clearly the amount of continuous

hydrophilic phase in the total composition is significantly more than the maximum of 20 wt.% allowed in claim 1 of the present application. Because of the amount of water which is present the compositions of Barnett et al., they cannot be used in gelatin capsules since the water in the composition would dissolve the capsules.

This is not found persuasive because Barnett et al. clearly teach that in the preferred embodiment the oil (or disperse phase) is usually present in the amounts **exceeding 80%** so that the system behaves like a gel (column 1, lines 61-63). Based on this teachings if the oil phase exceeds 80% the hydrophilic continuous phase clearly should be below 20%. Although an exact number cannot be calculated the amount of the hydrophilic phase is expected to overlap the instantly claimed range. Furthermore, the incorporation of Zecchino et al. clearly cures by rendering obvious the amount of hydrophilic phase that can be incorporated in such polyaphron systems.

Applicants assert that Zecchino et al. is not relevant. Although the gels described in this patent may be used as hair care products (see page 6, first paragraph), there is no suggestion of the use of biliquid foams for the oral administration of drugs. Accordingly, it would not be obvious to combine the teaching of Zecchino et al. with Barnett et al. In fact, these patents lie in entirely different technical fields. The examiner has suggested that both of these patents are in the field of pharmaceuticals, therefore the person of ordinary skill would easily combine them. This is not the case. The field of oral administration of drugs is very different to that of dermal treatment. Zecchino et al. only teach that the composition disclosed therein may contain pharmaceutical compositions intended for topical use (see page 6). It is silent on oral compositions. Moreover, the person of ordinary skill would know that the compositions

described in Zecchino et al. would not be suitable for oral administration. Thus, in contrast to combining the teaching of these patents, the person of ordinary skill would not consider Zecchino et al. to be relevant to the problem at hand.

This is not found persuasive because applicants are resorting to attacking the references individually. In response to applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Furthermore, Zecchino et al. teach a biliquid foam suitable for use in pharmaceutical or cosmetic system (abstract and claim 1). The recitation of claim 1 does not limit the pharmaceutical system for only skin treatment. Additionally, the recitation of "an oral drug delivery system" in the preamble of the claim is an intended use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In the instant case the biliquid foams taught by Barnett et al. and Zecchino et al. given the fact that the biliquid foams comprise water, oil, and surfactant, as in the instantly claimed invention, they are capable of being used as an oral drug delivery system. Additionally, the ingredients incorporated in the biliquid foams taught by Barnett et al. and Zecchino et al. do not contain any toxic agents, therefore, it is the examiner's position that the bilquid foams taught by the prior arts are capable of performing the instantly recited intended function.

Applicants assert that reference U is silent on biliquid foams and poorly water soluble drugs. It is therefore submitted that this document adds nothing further to the teaching of the person of ordinary skill.

This is not found persuasive because the evidentiary reference Final report on the safety assessment of peanut (Arachis Hypogaea) oil etc., International Journal of Toxicology, 20(2):65-77, 2001, which applicants called reference U is merely incorporated in the rejection to prove that peanut oil comprises a mono-, di-, or triglyceride (see abstract and page 66). This reference is an evidentiary reference.

Applicants further argue that Wheeler is directed to a gel and/or hair conditioning aqueous gel comprising a biliquid foam. It adds nothing to lead the person of ordinary skill to the present invention. There is no disclosure in this patent of a poorly-water soluble drug being dissolved in the pharmaceutically acceptable oil of a biliquid foam. Nor is there any disclosure of an oral drug delivery system. This patent is directed to gels for topical application- see the abstract which states that the biliquid foam comprises a dispersion of oil droplets in an aqueous medium stabilized by only a small amount of surfactant, thus keeping the level of skin irritation low.

This is not found persuasive because applicants are resorting to attacking the references individually. In response to applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Furthermore, Wheeler et al. teach a biliquid foam suitable for use in pharmaceutical, cosmetic, or other industries (abstract).

Additionally, the recitation of "an oral drug delivery system" in the preamble of the instant claims is an intended use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In the instant case the biliquid foams taught by Barnett et al., Zecchino et al., and Wheeler given the fact that the biliquid foams comprise water, oil, and surfactant, as in the instantly claimed invention, they are capable of being used as an oral drug delivery system. Additionally, the ingredients incorporated in the biliquid foams taught by Barnett et al., Zecchino et al., and Wheeler do not contain any toxic agents, therefore, it is the examiner's position that the bilquid foams taught by the prior arts are capable of performing the instantly recited intended function.

Applicants further argue that Leigh et al. is silent on biliquid foams, and instead teaches the use of micelle-forming liquids to solubilise poorly water soluble drugs. Thus, it would not be obvious to arrive at the present invention in the light of these patents. Instead, the person of ordinary skill would be taught towards forming a micelle-containing structure.

This is not found persuasive because applicants are resorting to attacking the references individually. In response to applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). First, the limitation of biliquid foam is clearly addressed by the teachings of Barnett et al. and Zecchino et al.. Second, for Leigh et al. to be a proper prior art they do not necessarily have to teach biliquid foam so long as there

is a motivation or reason to combine the references. In the instant case it would have been prima facie obvious to a person of ordinary skill in the art at the time of the instant invention to modify the teachings of Barnett et al. and Zecchino et al. to substitute a phospholipid for Tergitol 15-S surfactant or sodium lauryl sulfate as the co-emulsifier because substitution of one emulsifier for another is within the purview of the skilled artisan. An ordinary skilled artisan would have been motivated to incorporate the phospholipid because phospholipids enhance the absorption of and bioavailability of lipophilic drugs (Leigh et al., column 5, lines 39-50). Moreover the absorption, transport and pharmacokinetics of phospholipids are well-known (Leigh et al., column 5, lines 51-21). Such phospholipids as, e.g., phosphatidylcholine and mono-acyl phosphatidyl choline are endogenous compounds and, therefore, would be expected to have beneficial rather than adverse side effects (Leigh et al., column 6, lines 1-6). An ordinary skilled artisan would have had a reasonable expectation of success upon combining Barnett et al. and Zecchino et al., and Leigh et al., because Barnett et al., Zecchino et al. and Leigh et al. teach pharmaceutical compositions containing poorly water-soluble drugs.

Applicants further argue that Metziger et al. teach that the composition preferably comprises from between 10 and 15% by weight of surfactant relative to the total weight of the components of the active principle. Examples 1, 2 and 3 have 17%, 17%, and 13% by weight of surfactant relative to the total weight of the components of the active principle. The high levels of surfactant are necessary to solubilize the active agent in the oil. However, it is known that compositions comprising high levels of surfactant are potentially harmful on the intestinal wall. Moreover, the high levels of surfactant adds to cost and delivery system it would not be obvious to look to Metziger et al.

This is not found persuasive because applicants are resorting to attacking the references individually. In response to applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Furthermore, applicants' arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Additionally, the reference should be considered as a whole. Metziger et al. to the minimum teach the composition comprises between 5 and 25% by weight, preferably between 10 and 15% by weight, of surfactant (column 2, lines 52-54). Moreover, applicants' argument is merely an allegation not substantiated with any evidence. The main consideration about the rejection should be whether one of ordinary skill in the art would have the motivation or reason to combine the references together which the examiner provided as set forth in the record in the previous office action

Applicants have not demonstrated how their product is patentably distinct from the cited prior art nor do the claims as currently written distinguish the instant invention over the prior arts. In light of the forgoing discussion, one of ordinary skill in the art would have concluded that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a). Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Conclusion

Claims 1-6, 8-14, and 16-22 remain rejected. Because claims 1-6, 8-14, and 16-22 have not been amended by Applicant and the claims remain rejected, this Office Action is made FINAL. No claims are allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIGABU KASSA whose telephone number is (571)270-5867. The examiner can normally be reached on 9 am-5 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne P. Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tigabu Kassa 7/15/10

/Cherie M. Woodward/
Primary Examiner, Art Unit 1647